ABSTRACT

An integrated circuit based analyte detection system includes a plurality of bioprobe microarrays, each of the microarrays having a plurality of probe elements for combining with at least one target molecule. The probe elements generate an identifiable signal when combined with target molecules responsive to incident electromagnetic radiation. Structure is provided for translating the microarrays, allowing microarrays used by the system to be replaced by other microarrays. An integrated circuit microchip includes a plurality of detection channels to which the probe elements are brought into optical alignment.